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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Robert J Briscoe

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EXAMINER

GHOWRWAL, OMAR J

ART UNIT

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2416

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,442	Applicant(s) BRISCOE ET AL.	
	Examiner OMAR GHOWRWAL	Art Unit 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "26" has been used to designate both the black marker at the left of fig. 2 and the node at the upper right portion of fig. 2 (receiver node). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1, 4, 6, 8, 11, 13** are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Publication No. 2003/0202469 A1 to *Cain*.

As to claim 1, *Cain* discloses an intermediate node for controlling the treatment of data in a data network (fig. 1, node 3), the data network comprising said intermediate node, at least one upstream node (fig. 1, node 1), and a plurality of downstream nodes (fig. 1, nodes 5, 4), the or one of the upstream nodes being arranged to provide data to said intermediate node, the or one of the upstream nodes being arranged to provide path characterisation information to said intermediate node, and said downstream nodes being arranged to receive data via paths downstream from the intermediate node (para. 0031-0033, QoS parameter link metric sent from node 1 and traverses path 1-3-5-4, nodes 5 and 4 being downstream from node 3, 1-3-5 being a path, and 1-3-5-4 being a path); said intermediate node comprising:

means for receiving data from an upstream node (para. 0031-0033, node 3 receives data from node 1);

means for receiving path characterisation information from an upstream node, and for deriving therefrom information indicative of a characteristic of a path downstream of said intermediate node (para. 0031-0033, node 3 updates QoS link metric that pertains to sending data to destination node 4 (downstream or node 3), and then sends QoS route request to other nodes 2 and 5 (which are downstream));

means arranged to select, in dependence on said information indicative of said characteristic of a downstream path, a preferred manner of treatment for data to be forwarded on a downstream path (para. 0031-0033, because data must travel to node 4, the QoS route request is forwarded to other downstream nodes of the current intermediate node so that it can eventually reach node 4 (which is a manner of treatment)); and

means for forwarding data to a downstream node according to said preferred manner (para. 0031-0033, forwarding data through paths 1-3-5-4).

As to claim 4, *Cain* further discloses an intermediate node according to claim 1, wherein the data provided to said intermediate node comprises said path characterisation information (para. 0031-0033, QoS request is made up of a link metric pertaining to bandwidth, error rate, end-to-end delay, etc. which pertain to the path).

As to claim 6, *Cain* further discloses an intermediate node according to claim 1, wherein the intermediate node shares computational resources with an upstream or a downstream node (para. 0031-0033, QoS request is made up of a link metric pertaining

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to bandwidth, error rate, end-to-end delay, etc. which pertain to the path, and these are computational resources pertaining to the path, and they are updated as the link metric traverses the system).

As to **claim 8**, see similar rejection for **claim 1**. The node teaches the method.

As to claim 11, see similar rejection for claim 4. The node teaches the method.

As to claim 13, see similar rejection for claim 6. The node teaches the method.

5. **Claims 7, 14** are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Publication No. 2004/0146007 A1 to *Saadawi et al.* ("*Saadawi*").

As to **claim 7**, *Saadawi* discloses a controlling intermediate node for controlling the treatment of data in a data network (para. 0053, node I) also comprising a provider node (para. 0053, node S), a receiver node (para. 0053, node D), and at least one other intermediate node (para. 0054, various I nodes), the provider node being arranged to provide data and path characterisation information to at least one of said intermediate nodes or to the receiver node (fig. 3a, para. 0061, FCP generated from node S and contains measured information), said other intermediate node or nodes being arranged to receive data and forward data and path characterisation information to at least a further intermediate node or to the receiver node (fig. 3a, fig. 3b, forward FCP to another I node which may be D node), and the receiver node being arranged to receive data from at least one intermediate node or from the provider node (fig. 3a, fig. 3b, D node receives information from S node or I node); said controlling intermediate node comprising:

means for receiving data from the provider node or from an intermediate node upstream of said controlling intermediate node (fig. 3a, 3b, FCP received at I node, which can pertain to source node or another I node);

means for receiving path characterisation information from said provider node or from an intermediate node upstream of said controlling intermediate node (fig. 3a, 3b, para. 0061, FCP received and contains measured information), and for deriving therefrom information indicative of a characteristic of a path downstream of said controlling intermediate node (fig. 3b, 304, para. 0067 checking if FCP satisfies unwanted path constraints, and if not, selecting a further downstream node to send it to, i.e. the characteristic of the downstream path pertains to the I node's deeming it suitable to transmit the FCP to—for instance TTL has not been reached);

means arranged to select, in dependence on said information indicative of said characteristic of a downstream path, a preferred node from a set of nodes including said other intermediate node or nodes and the receiver node (fig. 3b, items 304, 305, 307, after looking at FCP information, selecting a neighbor node to forward data to, the neighbor node being from a set of "D" and other "I" nodes); and

means for forwarding data to said preferred node (fig. 3b, item 307, forward FCP to selected neighbor).

As to **claim 14**, see similar rejection for **claim 7**. The node teaches the method.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 2-3, 9-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Publication No. 2003/0202469 A1 to *Cain* in view of U.S. Publication No. 2004/0146007 A1 to *Saadawi et al.* ("*Saadawi*").

As to claim 2, *Cain* does not expressly disclose an intermediate node according to claim 1, wherein the selection of a preferred manner of treatment for data to be forwarded on a downstream path relates to selection of a preferred downstream path.

Saadawi discloses a FCP generated by a source node travels towards a destination node through intermediate nodes, and once the FCP arrives at an intermediate node, the stored weights of the intermediate node's neighbors are used in selecting the next node to send the FCP to (para. 0054), i.e. this is the preferred path based upon weighting.

Cain and *Saadawi* are analogous art because they are from the same field of endeavor regarding routing.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the weighted selection as taught by *Saadawi* into the invention of *Cain*. The suggestion/motivation would have been to aid in determining the next node to send an FCP to (*Saadawi*, para. 0054).

As to claim 3, *Cain* does not expressly disclose an intermediate node according to claim 1, wherein the selection of a preferred manner of treatment for data to be forwarded on a downstream path relates to selection of one or more of the following:(i)

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traffic engineering;(ii) route advert verification;(iii) contract verification;(iv) differentiated service gateways.

Saadawi discloses a FCP generated by a source node travels towards a destination node through intermediate nodes, and once the FCP arrives at an intermediate node, the stored weights of the intermediate node's neighbors are used in selecting the next node to send the FCP to (para. 0054), i.e. this is the preferred path based upon weighting. Furthermore, the weights are used in conjunction with a probability routing table (para. 0054, 0050), i.e. this is a form of traffic engineering as a flow of traffic is constructed based upon weight parameters.

Cain and *Saadawi* are analogous art because they are from the same field of endeavor regarding routing.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the weighted selection as taught by *Saadawi* into the invention of *Cain*. The suggestion/motivation would have been to aid in determining the next node to send an FCP to (*Saadawi*, para. 0054).

As to claim 9, see similar rejection for claim 2. The node teaches the method.

As to claim 10, see similar rejection for claim 3. The node teaches the method.

8. **Claims 5, 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Publication No. 2003/0202469 A1 to *Cain* in view of U.S. Publication No. 2001/0055290 A1 to *Seidel et al.* ("*Seidel*").

As to claim 5, *Cain* does not expressly disclose an intermediate node according to claim 1, the data network comprising a data channel for the forwarding of data

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between nodes and a control channel for providing path characterisation information to the intermediate node, wherein the upstream node arranged to provide data to said intermediate node is a node of the data channel, and the upstream node arranged to provide path characterisation information to said intermediate node is a node of the control channel.

Seidel discloses a data channel transmits protocol data units (PDUs), and a control channel which is independent of the data channel transmits sequence numbers (SNs), and both of these channels operate using a QoS level (para. 0019-0022), i.e. data is sent across the data channel, and SNs, which characterize the path by providing information about data units that must be sequentially received via the path (in other words, there are 'x' amounts of PDUs and this is the order they must be received in over the path), are transmitted across the control channel. Additionally, the SNs of the control channel identify whether incremental redundancy is used or not, and this reconfigures the receiver to an on/off state for incremental redundancy (para. 0050), i.e. this is more path characterization information, as the receiver in the path can change states based upon the SNs.

Cain and *Seidel* are analogous art because they are from the same field of endeavor regarding data processing.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the data and control channels as taught by *Seidel* into the invention of *Cain*. The suggestion/motivation would have been to provide for additional performance gain (*Seidel*, para. 0019).

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As to claim 12, see similar rejection for claim 5. The node teaches the method.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OMAR GHOWRWAL whose telephone number is (571)270-5691. The examiner can normally be reached on Monday-Thursday, 8:00am-5:00pm est..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derrick Ferris can be reached on (571)272-3123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/O. G./

Examiner, Art Unit 2416

/Derrick W Ferris/

Supervisory Patent Examiner, Art Unit 2416